

REMARKS

By the present amendment, the specification was amended on page 14 to correct a typographical error.

Claims 1-3 and 16-19 remain pending in the application.

In the Final Office Action, the Examiner rejected claims 1, 3, 16, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Number 5,416,517 to Tani et al. in view of the Applicant's admitted prior art.

Claims 2 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tani et al. in view of the Applicant's admitted prior art, in view of U.S. Patent Number 5,576,762 to Udagawa.

In view of the arguments that follow, Applicant respectfully traverses the Examiner's rejection of claims 1-3 and 16-19.

Rejection Under 35 U.S.C. § 103(a)

The Examiner rejected claims 1, 3, 16, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over to Tani et al. in view of the Applicant's admitted prior art. The rejection is respectfully traversed.

Applicant's claim 1 recites an electronic camera, comprising: an imaging device which captures a sequence of images of an object and outputs image signals for the sequence of images at a rate defined by an imaging cycle of the imaging device, the imaging

cycle defining a maximum exposure period for the imaging device; a changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for the imaging device; a display; and a controller which controls the display to display the sequence of images according to the image signals while the imaging device is capturing subsequent images, such that the display shows a live image to enable determination of an image-capturing angle of view.

The Examiner asserted that Tani et al. disclose an electronic camera comprising an imaging device which captures a sequence of images of an object and outputs image signals for said sequence of images at a rate defined by an imaging cycle of said imaging device, said imaging cycle defining a maximum exposure period for said imaging device. The Examiner further asserted that Tani et al. teaches that an image is outputted at a cycle of 1/60 second and that the shutter speed may be more than 1/60 second. According to the Examiner, it would have been obvious to one of ordinary skill that a changing device, which changes the cycle of the imaging device, would be used to accommodate the situation in which the shutter speed exceeds the default imaging cycle.

The Examiner admits that Tani et al. does not teach a display, or that the image is displayed so that a user can determine the image-capturing angle of view. However, the Examiner alleged that the Applicant's admitted prior art teaches a display, and that the

electronic camera is capable of displaying a live image on the LCD so that the LCD can be used as a viewfinder to determine the image-capturing angle view. According to the Examiner, the controller that controls the display to display the image according to the image signals while the imaging device is capturing the live image is inherently taught and it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the practice of changing the imaging cycle taught by Tani et al. with the practice of displaying a live view taught by the Applicant's admitted prior art to make an apparatus wherein the imaging device continually outputs an image signal to the display in the cycle and wherein the cycle may be changed. The Examiner further alleged that one of ordinary skill would have been motivated to make such a modification to detect how the image quality of a desired scene changes according to the varying exposure times.

Applicant respectfully submits that neither Tani et al. nor Applicant's admitted prior art, taken singly or in combination (assuming these teachings may be combined, which Applicant does not admit), teach or suggest all the claimed limitations of the present invention. Among other things, the references do not disclose or suggest a "changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for said imaging device," as recited in claim 1.

Tani et al. disclose a driving pulse, from a diaphragm driving circuit, which is a preset rate at an interval of 1/60 second for driving a CCD image pick-up device to read an image signal of an object that is outputted to a record and playback portion. Tani et al. further disclose a clock generator that outputs a periodic accumulation control signal from a microcomputer that periodically transfers an electrical charge accumulated in a photodiode or light receiving elements during exposure to the CCD image pickup device at the preset interval at 1/60 second. A time at which the microcomputer outputs the periodical accumulation control signal is obtained by a calculation of a shutter speed from a time at which a subsequent periodical accumulation control signal is outputted from the clock generator when the shutter speed is higher than 1/60 second, and by calculating the shutter speed from the time at which several accumulation control pulses are outputted thereafter when the shutter speed is slower than 1/60 second. There is nothing in Tani et al. that is analogous to a changing device which changes the cycle of the imaged device, thereby changing the maximum exposure period for said imaging device.

Applicant's admitted prior art does not make up for the deficiencies of Tani et al. Applicant's admitted prior art discloses a well-known electronic camera, such as a digital still camera that has a liquid crystal display (LCD) for displaying image-capturing conditions, recorded images, etc., at the moment of

capturing the image through the imaged device. Applicant's admitted prior art further discloses that the LCD can be used as a finder to determine the image-capturing angle view and when the live image is displayed on the LCD, the maximum exposure time of the imaging device is fixed at a video rate such as 1/60 second. There is nothing in Tani et al. or Applicant's admitted prior art, taken singly or in combination, that disclose "a changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for said imaging device."

Applicant also respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, the proposed modification of the prior art must have had a reasonable expectation of succeeding, as determined from the vantage point of a skilled artisan at the time the invention was made. Third, the prior art references, when combined, must teach or suggest all the claim limitations. See M.P.E.P. § 2143.

The Examiner relies on the teachings of Tani et al. which disclose the driving pulse, from a diaphragm driving circuit, which is a preset rate at an interval of 1/60 second for driving a CCD

image pick-up device to read an image signal of an object and Applicant's admitted prior art which discloses an electronic camera with an LCD that can be used as a finder to determine the image-capturing angle view and when the live image is displayed on the LCD, the maximum exposure time of the imaging device is fixed at a video rate such as 1/60 second. These teachings, however, fail to provide the artisan of ordinary skill with a suggestion or motivation that an electronic camera includes a "changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for said image device," as claimed.

Furthermore, a person of ordinary skill in the art at the time of making the invention must also have had a reasonable expectation that Tani et al. and Applicant's admitted prior art would have achieved success in an electronic camera that includes "a changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for said image device," as claimed. Moreover, there is no reasonable expectation provided in Tani et al. and Applicant's admitted prior art that any such modification could be made successfully to teach or suggest an electronic camera that includes "a changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for said image device."

In view of the above reasons, Applicant respectfully submits that the asserted combination of Tani et al. and Applicant's

admitted prior art fail to establish a *prima facie* case of obviousness of independent claim 1, or any claim depending therefrom. Applicant further submits that the Examiner's conclusion in claim 1 is based on improper hindsight reasoning. See M.P.E.P. § 2142. The Examiner may not utilize the Applicant's own disclosure as motivation for altering a reference that lack sufficient disclosure to teach the Applicant's claimed invention.

In view of the foregoing reasons, Applicant submits that claim 1 is not taught or suggested by Tani et al. in view of Applicant's admitted prior art, and the rejection of claim 1 should be withdrawn. Claims 16, 17 and 19 is allowable for at least the reasons stated above with regard to the respective base claim 1.

Applicant further submits that neither Tani et al. nor Applicant's admitted prior art, taken singly or in combination, teach or suggest a "changing device automatically changes the cycle of the imaging device," as recited in claim 3.

Again, Tani et al. disclose a driving pulse, from a diaphragm driving circuit, which is a preset rate at an interval of 1/60 second for driving a CCD image pick-up device to read an image signal of an object that is outputted to a record and playback portion. There is nothing in Tani et al. that is analogous to a changing device automatically changes the cycle of the imaging device. Moreover, Applicant's admitted prior art does not make up for the deficiencies of Tani et al.

In view of the foregoing reasons, Applicant submits that claim 3 is not taught or suggested by Tani et al. in view of Applicant's admitted prior art, and the rejection of claim 3 should be withdrawn.

Applicant further submits that neither Tani et al. nor Applicant's admitted prior art, taken singly or in combination, teach or suggest "wherein said rate is a video rate, and said changing device changes said video rate to enable said imaging device to output brighter images," as recited in claim 18.

Tani et al. disclose a microcomputer that is connected to a brightness metering portion which compresses a brightness signal that is generated by the brightness metering element that detects the brightness of an object to effect an analog-digital conversion to output digital brightness data. The microcomputer calculates an optimum diaphragm value and an optimum shutter speed in accordance with the brightness data. Tani et al. further disclose a driving pulse, from a diaphragm driving circuit, which is a preset rate at an interval of 1/60 second for driving a CCD image pick-up device to read an image signal of an object. However, there is nothing in Tani et al. that disclose a "changing device" that "changes said video rate to enable said imaging device to output brighter images." Moreover, Applicant's admitted prior art does not make up for the deficiencies of Tani et al.

In view of the foregoing reasons, Applicant submits that claim 18 is not taught or suggested by Tani et al. in view of Applicant's admitted prior art, and the rejection of claim 18 should be withdrawn.

The Examiner rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Tani et al. in view of the Applicant's admitted prior art, and in view of Udagawa.

Applicant's claim 2 recites "wherein the changing device is manually operated to change the cycle of the imaging device."

The Examiner asserted that Tani et al. in view of Applicant's admitted prior teaches the apparatus of claim 1. The Examiner admitted that Tani et al. in view of Applicant's admitted prior art does not teach the changing device is manually operated to change the cycle of the imaging device. The Examiner alleged that Udagawa teaches that the changing device is manually operated to change the cycle of the imaging device. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the manually changeable device taught by Udagawa in the apparatus of Tani et al. in view of Applicant's admitted prior art to make an imaging device whose imaging cycle can be both automatically or manually change, and one of ordinary skill would have been motivated to make such a modification to give the camera operator more control over the imaging process.

Arguments were made above, regarding claim 1, that Tani et al. in view of Applicant's admitted prior art does not teach or suggest a "changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for said imaging device." Applicant respectfully submits that neither Tani et al., Applicant's admitted prior art, nor Udagawa, taken singly or in combination, disclose a changing device which changes the cycle of the imaging device, thereby changing the maximum exposure period for said imaging device. Moreover, neither Tani et al., Applicant's admitted prior art, nor Udagawa, taken singly or in combination, disclose "wherein the changing device is manually operated to change the cycle of the imaging device," as recited in claim 2.

Udagawa discloses a control circuit that operates to automatically set a shutter speed of an electronic shutter in accordance with an output from an illuminance detection circuit or a manually set value of shutter speed setting. Udagawa further discloses an electronic shutter performs an exposure control in combination with an exposure aperture where shutter speed of 1/60 second is set mostly under a low illumination state among various light quantities. Therefore, Udagawa shutter speed is set at 1/60 second and only allows a maximum shutter speed of 1/60 second. There is nothing in Tani et al., Applicant's admitted prior art, or Udagawa, taken singly or in combination, that disclose a "changing

device which changes the cycle of the imaging device, thereby **changing the maximum** exposure period for said imaging device." Moreover, there is nothing in Tani et al., Applicant's admitted prior art, or Udagawa, taken singly or in combination, that disclose "the changing device is manually operated to change the cycle of the imaging device."

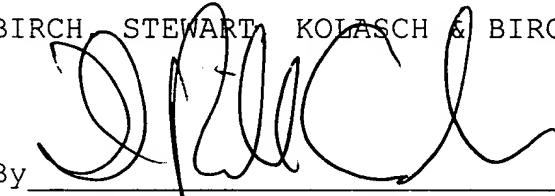
In view of the foregoing reasons, Applicant submits that claim 2 is not taught or suggested by Tani et al. in view of Applicant's admitted prior art, in view of Ugadawa, and the rejection of claim 2 should be withdrawn.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of the pending claims.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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